

PATENT SPECIFICATION

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(72) Inventor ERIC TAYLOR



(54) HOSPITAL BED ATTACHMENTS

(71) We, SIDDALL & HILTON
LIMITED. of Claremount Road,
Boothtown, Halifax, in the county of York,
a British Company do hereby declare the
invention, for which we pray that a patent
may be granted to us, and the method by
which it is to be performed, to be par-
ticularly described in and by the following
statement :—
The present invention is concerned with
hospital beds, that is to say beds which are
designed primarily for use in hospitals,
clinics, nursing homes and like institutions,
where the occupant of the bed may be in
need of medical attention. It is usual for the
head and foot of a hospital bed to be
detachable, and other optional attachments
may be provided such as side frames and
support structures providing gantries over
the bed.
The invention provides a hospital bed
having an attachment therefor, the bed or
attachment having a tongue rigidly secured
thereto, the tongue having a wedge portion
for engagement between a pair of abut-
ments on the attachment or bed. the in-
cluded angle between the faces of the wedge
portion lying within the range 12° to 20°. A
particularly suitable angle is 16°.
According to a preferred feature of the
invention, a socket is provided on the at-
tachment or bed to receive the tongue, the
socket having a vertical inside face and a
convex curved face facing the vertical face,
these two faces providing the pair of
abutments for engagement with the wedge
portion of the tongue. It is also preferred
that the wedge portion has a vertical face for
engagement with the vertical inside face of
the socket. and a face inclined to the ver-
tical for engagement with the curved face in
the socket. The curved face may con-
veniently be provided by a cylindrical rod
within the socket.
Preferably there are two or more of the
tongues secured to the bed or attachment at
spaced apart positions, and a corresponding
arrangement of pairs of abutments on the
attachment or bed.

By way of example, a specific em-
bodiment of the invention will now be
described, with reference to the ac-
companying drawings, in which:—
Figure 1 is an end view of part of a bed
according to the invention; and
Figure 2 is a longitudinal section through
the foot portion of the bed.
The bed generally comprises a mattress
frame having longitudinally extending side
members 10 and shorter box section end
members 11. Only one side member and one
end member are visible in the drawings. The
frame carries the legs of the bed (not shown)
and there may be a jacking mechanism
between the frame and legs as on many
conventional hospital beds.
Two sockets 12 are welded to the outer
end face of the foot end member 11 at
widely spaced positions, so that each socket
is near to the corresponding end of the foot
end member. Each socket consists of a piece
of hollow metal tube, of rectangular section,
mounted on the foot end member 11, so that
the open ends of the socket are at the top
and bottom. Hence, the inside face 14 of the
wall of the socket which is welded to the end
face of the member 11 forms a vertical
inside wall, which acts as a location abut-
ment, as will hereinafter appear. Also, a
cylindrical rod 13 about half an inch in
diameter is welded in each socket, so that it
extends transversely of the socket, parallel
to the member 11. at a position spaced from
the aforesaid vertical inside face, thereby
presenting a convex curved wall, facing
towards the vertical location face 14.
The bed foot 15 has two metal tongues 16
secured to the lower part of the bed foot. by
screws 17. The tongues are spaced apart
transversely of the bed foot, so that each
tongue is in position to co-operate with one
of the sockets 12 provided on the bed frame.
Each tongue consists of a vertically disposed
strip of metal, of generally rectangular
cross-section. part of the strip projecting
below the bottom edge of the foot. This
lower projecting portion 18 of the strip is
shaped to provide a snout portion, which is

5 narrower than the upper portion of the tongue, but has parallel faces, the snout portion being joined to the upper wider portion of the tongue by a wedge-shaped portion 19. The portion 19 has an inclined face on the side nearest to the foot, which face faces the rod of the socket, when the tongue is lowered into the socket.

10 The face of the tongue furthest from the foot is straight throughout its length, and when the tongue is lowered into the corresponding socket, this face of the tongue engages with the vertical location face 14 inside the socket. The width of the snout is less than the minimum distance between the vertical location face of the socket and the curved periphery of the rod, so that the snout passes easily between the rod and the location face. However, the upper portion of the tongue is wider than the space between the location face and the rod, and consequently as the tongue is lowered, the inclined surface of the tongue engages with the curved periphery of the rod.

25 It is an important feature of this example, that the angle of inclination of the inclined face to the vertical, shall be within predetermined limits of 12° to 20° . Hence, as the tongue enters the socket, there is a proper location of the tongue (and hence the bed foot) relatively to the socket, but on the one hand, the angle of the inclined portion is not so great that it merely rests on the rod and does not serve to hold the bed foot rigid, whereas on the other hand the angle of inclination is not so low that there is a real wedging action between the tongue and the socket. It will be appreciated, that it is highly undesirable to have a bed foot which is not held rigidly in position, but at the same time it is convenient for a nurse to be able to remove the bed foot by simply lifting it to release the tongues from their respective sockets, without having to overcome a severe wedging action.

50 It will be appreciated that instead of providing a vertical location face and a curved wall within the socket, a similar effect could be obtained by a pair of spaced rods, but in that case it would be difficult to obtain a good location of the tongue because there would be only line contact between the tongue and the rods on both sides, whereas in the construction described above, there is line contact between the tongue and the rod, but full area contact between the vertical face of the tongue, and the vertical location wall in the socket.

60 It has been found that a very effective

angle of inclination to the vertical for the inclined portion of the tongue is 16° .

6.5 Whit in the above specific example, the invention has been described with reference to a bed Foot, the invention can also be applied to the head, side frame or other attachments which have to be removable from the bed itself. Furthermore it is possible for the tongues 16 to be attached to the bed, the sockets 12 being provided on the foot, head or other attachment.

WHAT WE CLAIM IS:—

1. A hospital bed having an attachment therefor, the bed or attachment having a tongue rigidly secured thereto, the tongue having a wedge portion for engagement between a pair of abutments on the attachment or bed, the included angle between the faces of the wedge portion lying within the range 12° to 20° .

2. A hospital bed as claimed in Claim 1, in which the said included angle is 16° .

3. A hospital bed as claimed in Claim 1 or Claim 2, in which a socket is provided on the attachment or bed to receive the tongue, the socket having a vertical inside face and a convex curved face facing the vertical face, these two faces providing the pair of abutments for engagement with the wedge portion of the tongue.

4. A hospital bed as claimed in Claim 3, in which the wedge portion has a vertical face for engagement with the vertical inside face of the socket, and a face inclined to the vertical for engagement with the curved face in the socket.

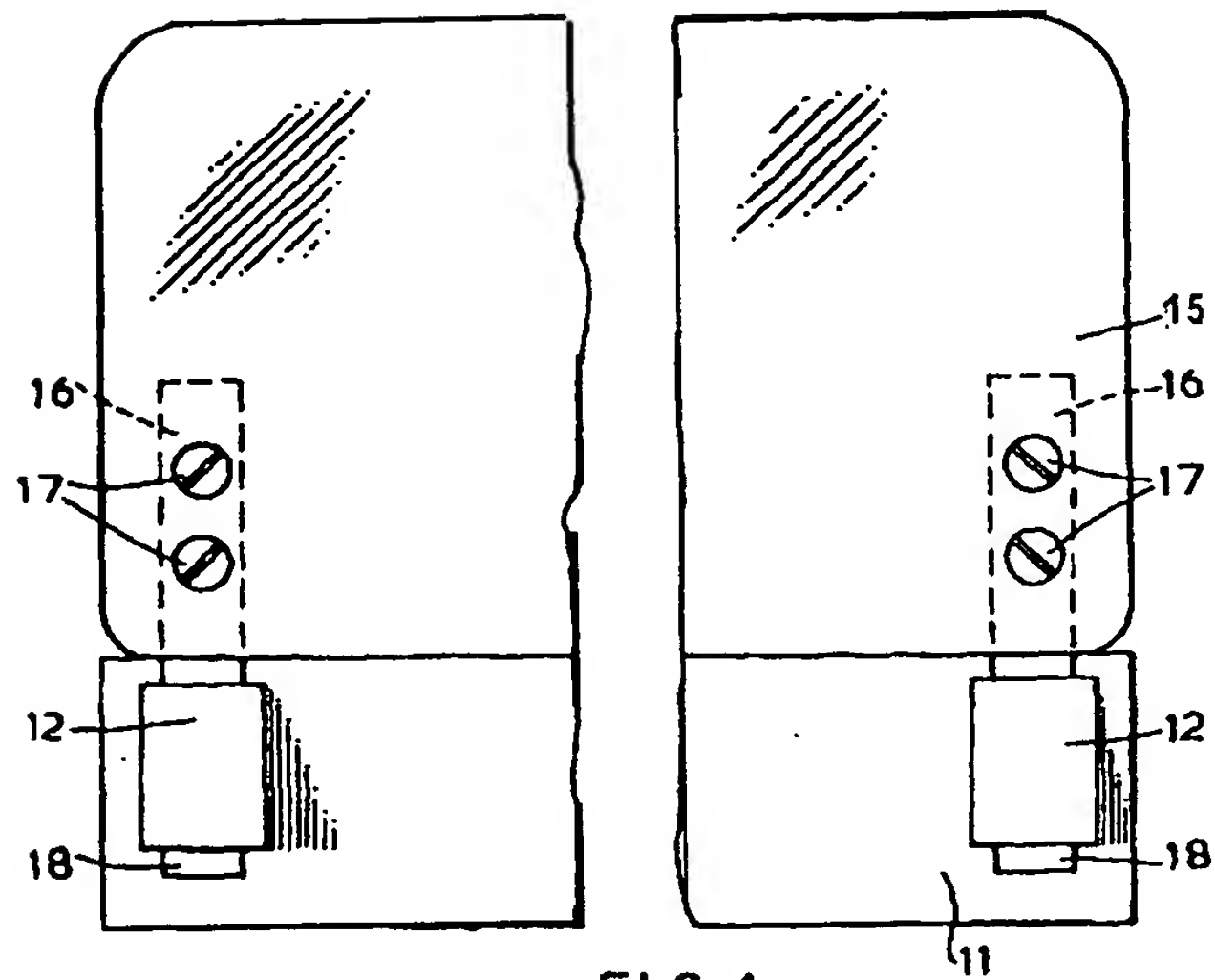
5. A hospital bed as claimed in Claims 3 or 4 in which the curved face is provided by a cylindrical rod within the socket.

6. A hospital bed as claimed in any one of the preceding claims, in which there are two or more tongues secured to the bed or attachment at spaced apart positions, and a corresponding arrangement of pairs of abutments on the attachment or bed.

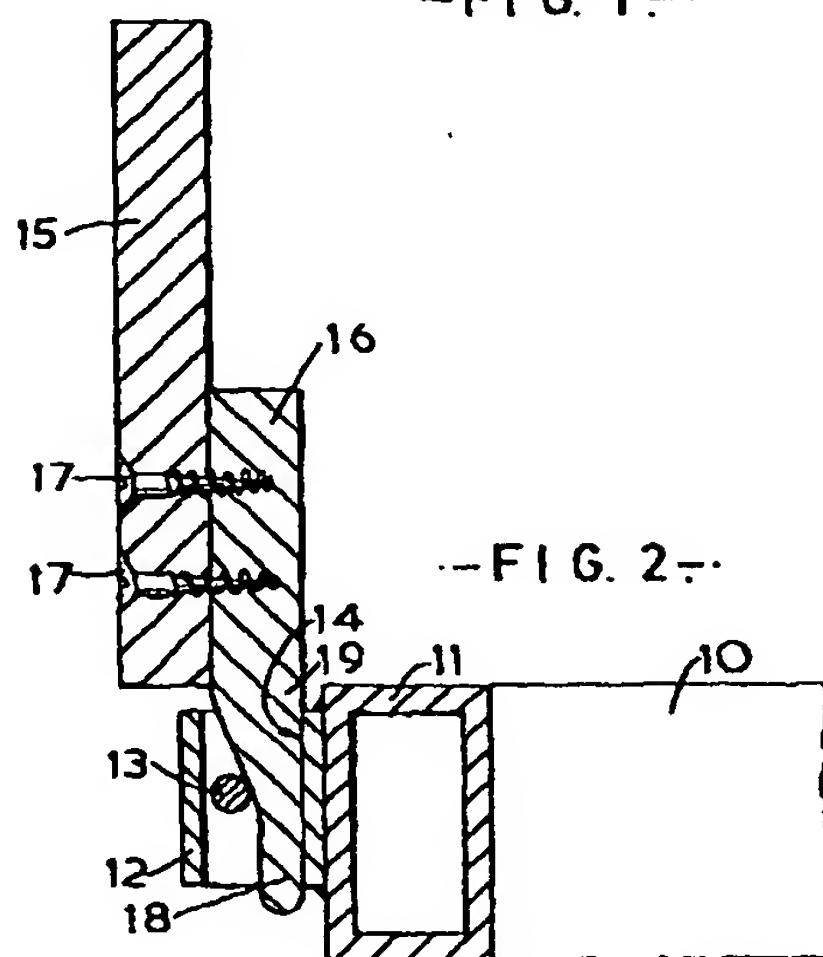
7. A hospital bed as claimed in Claim 6, in which the attachment comprises a foot-board for the bed and there are two tongues arranged one adjacent each end of the foot-board, and two corresponding pairs of abutments arranged on the frame of the bed.

8. A hospital bed constructed and arranged substantially as hereinbefore described, with reference to and as illustrated in the accompanying drawings.

APPLEYARD, LEES & CO,
15 Clare Road,
Halifax, Yorkshire,
Agents for the Applicants.



—FIG. 1—



—FIG. 2—